

AVA-434.3 PCT.ST25.txt
SEQUENCE LISTING

<110> Avant Immunotherapeutics, Inc.
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Tinge, Steven A.
Killeen, Kevin P.

<120> Orally-Administered Live Bacterial Vaccines For Plague

<130> AVA-434.3 PCT

<140> PCT/US2004/
<141> 2004-12-09

<150> 60/528,140
<151> 2003-12-09

<150> 60/559,259
<151> 2004-04-02

<150> 60/573,517
<151> 2004-05-22

<150> 60/610,474
<151> 2004-09-16

<160> 14

<170> PatentIn version 3.3

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<212> DNA
<213> Yersinia pestis

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gttaacttta cagatgccgc gggtgatccc atgtacttaa catttacttc tcaggatgga 240
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cctaaggtaa acggtgagaa cttgtgggg gatgacgtcg tcttgctac gggcagccag 360
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<213> Yersinia pestis

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Pro Ala Arg Ile Thr Leu Thr Tyr Lys Glu Gly Ala Pro Ile Thr Ile
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AVA-434.3 PCT.ST25.txt

Met Asp Asn Gly Asn Ile Asp Thr Glu Leu Leu Val Gly Thr Leu Thr
35 40 45

Leu Gly Gly Tyr Lys Thr Gly Thr Thr Ser Thr Ser Val Asn Phe Thr
50 55 60

Asp Ala Ala Gly Asp Pro Met Tyr Leu Thr Phe Thr Ser Gln Asp Gly
65 70 75 80

Asn Asn His Gln Phe Thr Thr Lys Val Ile Gly Lys Asp Ser Arg Asp
85 90 95

Phe Asp Ile Ser Pro Lys Val Asn Gly Glu Asn Leu Val Gly Asp Asp
100 105 110

Val Val Leu Ala Thr Gly Ser Gln Asp Phe Phe Val Arg Ser Ile Gly
115 120 125

Ser Lys Gly Gly Lys Leu Ala Ala Gly Lys Tyr Thr Asp Ala Val Thr
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Val Thr Val Ser Asn Gln
145 150

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aatagagtaa ttactgatga tatcgaaatttgc ctaagaaaa tcctagcttta ttttctaccc 240
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AVA-434.3 PCT.ST25.txt

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Glu Glu Leu Val Gln Leu Val Lys Asp Lys Asn Ile Asp Ile Ser Ile
35 40 45

Lys Tyr Asp Pro Arg Lys Asp Ser Glu Val Phe Ala Asn Arg Val Ile
50 55 60

Thr Asp Asp Ile Glu Leu Leu Lys Ile Leu Ala Tyr Phe Leu Pro
65 70 75 80

Glu Asp Ala Ile Leu Lys Gly Gly His Tyr Asp Asn Gln Leu Gln Asn
85 90 95

Gly Ile Lys Arg Val Lys Glu Phe Leu Glu Ser Ser Pro Asn Thr Gln
100 105 110

Trp Glu Leu Arg Ala Phe Met Ala Val Met His Phe Ser Leu Thr Ala
115 120 125

Asp Arg Ile Asp Asp Asp Ile Leu Lys Val Ile Val Asp Ser Met Asn
130 135 140

His His Gly Asp Ala Arg Ser Lys Leu Arg Glu Glu Leu Ala Glu Leu
145 150 155 160

Thr Ala Glu Leu Lys Ile Tyr Ser Val Ile Gln Ala Glu Ile Asn Lys
165 170 175

His Leu Ser Ser Ser Gly Thr Ile Asn Ile His Asp Lys Ser Ile Asn
180 185 190

Leu Met Asp Lys Asn Leu Tyr Gly Tyr Thr Asp Glu Glu Ile Phe Lys
195 200 205

Ala Ser Ala Glu Tyr Lys Ile Leu Glu Lys Met Pro Gln Thr Thr Ile
Page 3

AVA-434.3 PCT.ST25.txt

210

215

220

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Gly Ser Glu Asn Lys Arg Thr Gly Ala Leu Gly Asn Leu Lys Asn Ser
 245 250 255

Tyr Ser Tyr Asn Lys Asp Asn Asn Glu Leu Ser His Phe Ala Thr Thr
 260 265 270

Cys Ser Asp Lys Ser Arg Pro Leu Asn Asp Leu Val Ser Gln Lys Thr
 275 280 285

Thr Gln Leu Ser Asp Ile Thr Ser Arg Phe Asn Ser Ala Ile Glu Ala
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<213> Yersinia pestis

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aataaccacc	aattcactac	aaaagtgatt	ggcaaggatt	ctagagattt	tgatatctct	300
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ccgaatacac	aatgggaatt	gcggcggttc	atggcagtaa	tgcatttctc	tttaaccgcc	840
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AVA-434.3 PCT.ST25.txt

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Met Asp Asn Gly Asn Ile Asp Thr Glu Leu Leu Val Gly Thr Leu Thr
35 40 45

Leu Gly Gly Tyr Lys Thr Gly Thr Thr Ser Thr Ser Val Asn Phe Thr
50 55 60

Asp Ala Ala Gly Asp Pro Met Tyr Leu Thr Phe Thr Ser Gln Asp Gly
65 70 75 80

Asn Asn His Gln Phe Thr Thr Lys Val Ile Gly Lys Asp Ser Arg Asp
85 90 95

Phe Asp Ile Ser Pro Lys Val Asn Gly Glu Asn Leu Val Gly Asp Asp
100 105 110

Val Val Leu Ala Thr Gly Ser Gln Asp Phe Phe Val Arg Ser Ile Gly
115 120 125

Ser Lys Gly Gly Lys Leu Ala Ala Gly Lys Tyr Thr Asp Ala Val Thr
130 135 140

Val Thr Val Ser Asn Gln Glu Phe Met Ile Arg Ala Tyr Glu Gln Asn
145 150 155 160

AVA-434.3 PCT.ST25.txt

Pro Gln His Phe Ile Glu Asp Leu Glu Lys Val Arg Val Glu Gln Leu
165 170 175

Thr Gly His Gly Ser Ser Val Leu Glu Glu Leu Val Gln Leu Val Lys
180 185 190

Asp Lys Asn Ile Asp Ile Ser Ile Lys Tyr Asp Pro Arg Lys Asp Ser
195 200 205

Glu Val Phe Ala Asn Arg Val Ile Thr Asp Asp Ile Glu Leu Leu Lys
210 215 220

Lys Ile Leu Ala Tyr Phe Leu Pro Glu Asp Ala Ile Leu Lys Gly Gly
225 230 235 240

His Tyr Asp Asn Gln Leu Gln Asn Gly Ile Lys Arg Val Lys Glu Phe
245 250 255

Leu Glu Ser Ser Pro Asn Thr Gln Trp Glu Leu Arg Ala Phe Met Ala
260 265 270

Val Met His Phe Ser Leu Thr Ala Asp Arg Ile Asp Asp Asp Ile Leu
275 280 285

Lys Val Ile Val Asp Ser Met Asn His His Gly Asp Ala Arg Ser Lys
290 295 300

Leu Arg Glu Glu Leu Ala Glu Leu Thr Ala Glu Leu Lys Ile Tyr Ser
305 310 315 320

Val Ile Gln Ala Glu Ile Asn Lys His Leu Ser Ser Ser Gly Thr Ile
325 330 335

Asn Ile His Asp Lys Ser Ile Asn Leu Met Asp Lys Asn Leu Tyr Gly
340 345 350

Tyr Thr Asp Glu Glu Ile Phe Lys Ala Ser Ala Glu Tyr Lys Ile Leu
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Glu Lys Met Pro Gln Thr Thr Ile Gln Val Asp Gly Ser Glu Lys Lys
370 375 380

Ile Val Ser Ile Lys Asp Phe Leu Gly Ser Glu Asn Lys Arg Thr Gly
385 390 395 400

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405 410 415

Glu Leu Ser His Phe Ala Thr Thr Cys Ser Asp Lys Ser Arg Pro Leu

420 AVA-434.3 PCT.ST25.txt 425 430

Asn Asp Leu Val Ser Gln Lys Thr Thr Gln Leu Ser Asp Ile Thr Ser
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AVA-434.3 PCT.ST25.txt

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31